

# 3S-CHL Chlorophyll Sensor

Compact online sensor for chlorophyll determination

## APPLICATION FIELDS

- Determination of chlorophyll in water as a method to estimate and monitor the total concentration of algae in water bodies.



## ADVANTAGES / FEATURES

### • Compact design, sturdy build

Great responsiveness in a small volume thanks to the Fast Loop sample reservoir included in the analyzer. The stainless steel enclosure makes the analyzer resistant to corrosion even in the most harsh industrial conditions.

### • Low operating costs

Minimum maintenance necessary: the external probe with wiper requires only sporadic manual cleaning. No reagents or filling solutions are needed.

### • Wide measuring range, low detection limit

Determination range up to 400  $\mu\text{g/l}$ .

### • Measurement principle

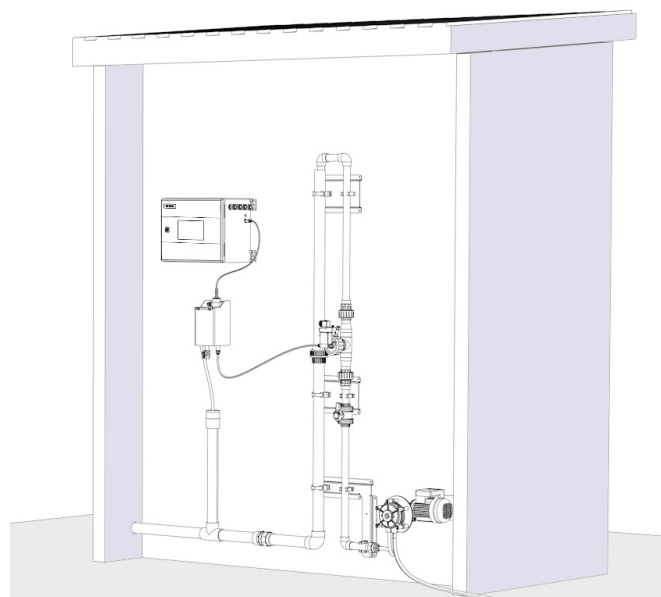
The sensor is based on the fluorescence photometric determination of chlorophyll dissolved in water. The external probe is installed in a sample reservoir and measurements are taken on the circulating sample flow.



## TECHNICAL SPECIFICATIONS

Measured parameters	Chlorophyll
Measuring principle	Fluorescence photometry.
Measuring range	0 - 400 µg/l
Resolution	0.1 µg/l
Accuracy	0.09 µg/l
Analysis Frequency	≥ 1 s
Sample	Pressure-free vessel (probe up to 6 bar) Temperature: 5 - 50 °C (41 - 122 °F) Flow Rate: 80 to 500 mL/min Connection: 6 mm (¼-in.)
Drain	Pressure-free, atmospheric drain Connection: 12 mm (½-in.)
Dimensions (H x W x D)	Ø 36 mm, L 156 mm
Weight	Approx. 1 kg (2.2 lbs)
Body Material	Titanium
Power Supply	Voltage: 5 - 12 VDC Power consumption: max. 0.5 VA
Outputs	2 x 4-20 mA outputs for measured data
Alarms	2 SPDT programmable potential free relays
Operating temperature	5 - 50 °C (41 - 122 °F)
Relative Humidity	10 to 85% (indoor use only)
Installation	Wall mount (standard), bench top support or panel mount (options).
Protection Grade	IP68 (10 m underwater)

## INSTALLATION EXAMPLE

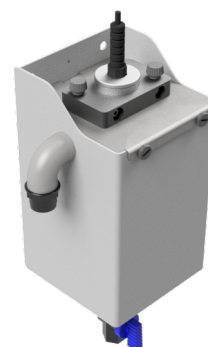


The analyzer is easily installed in a minimum amount of wall space.

In the picture are included the optional accessories:

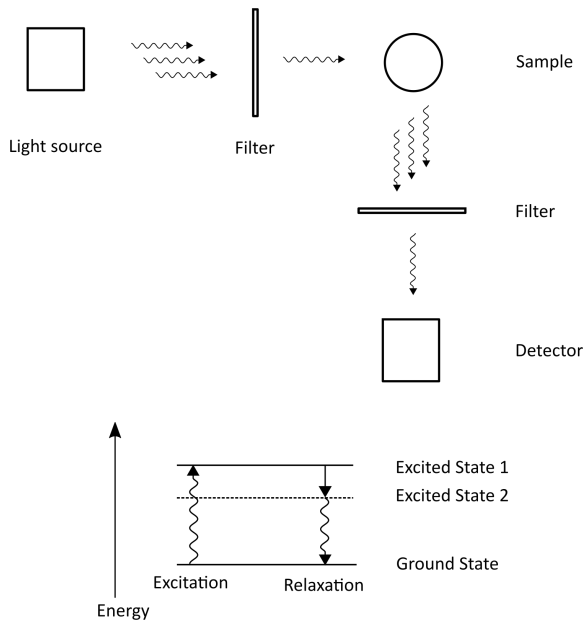
- a) 3S-PC1000 probe controller
- b) A46SF10020 - Filtration unit 100 micron 230 VAC
- c) A46SPP0000 - Sampling Pump

## FAST LOOP RESERVOIR WITH PROBE



The probe is installed in the provided Fast Loop sample reservoir, protected from external light and easily accessible for cleaning and maintenance.

## FLUORESCENCE SPECTROSCOPY



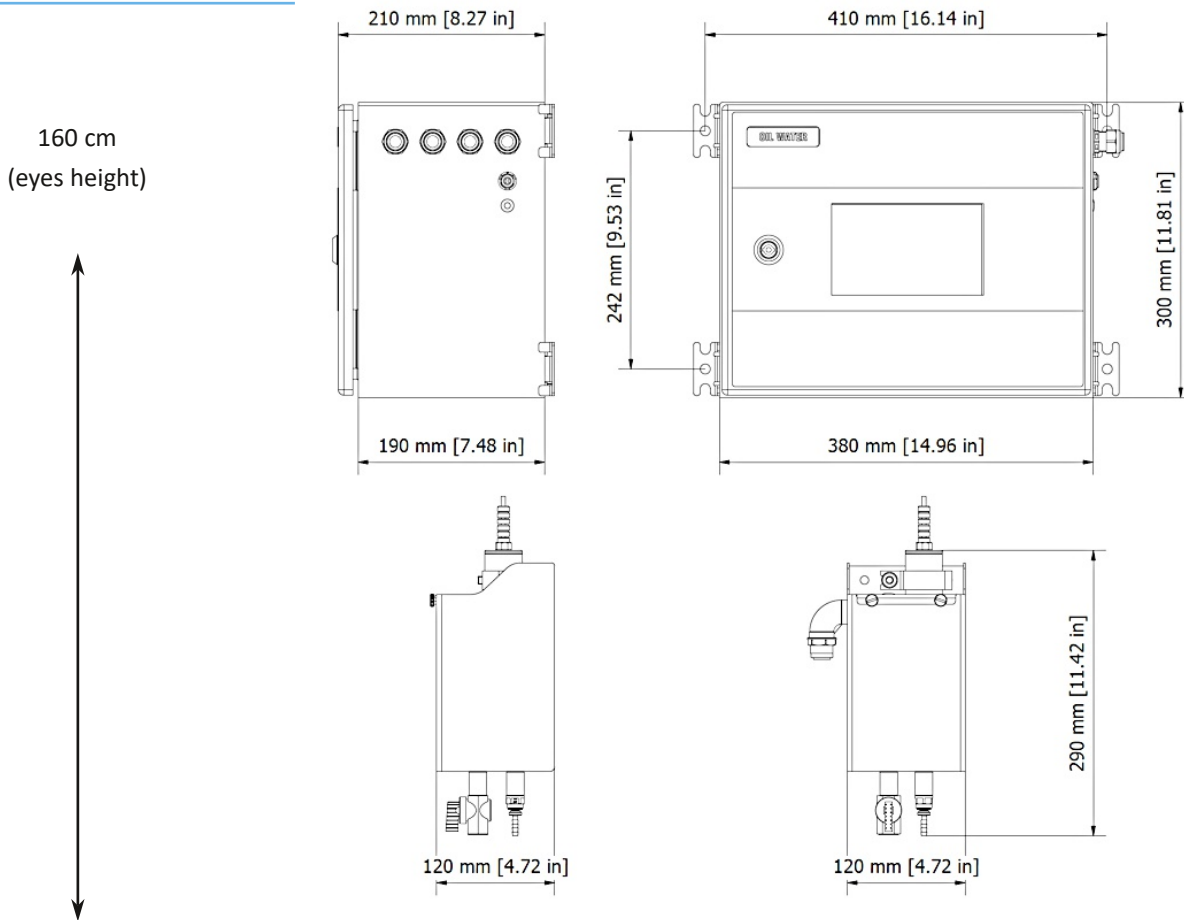
A polychromatic light source is filtered to select a specific wavelength. Molecules in the sample absorb the energy from the radiation and reach Excited State 1.

A part of the energy is released as heat and the species reach Excited State 2. The remaining energy is then released as a photon of appropriate wavelength and the molecule reaches the Ground State again.

Another filter selects a specific wavelength, characteristic of the species we want to analyze and a detector measure the intensity of this emitted radiation. The detector is thus placed at an angle to avoid interference with the incident light.

The amount of emitted radiation is proportional to the concentration of our target molecule.

## TECHNICAL DRAWINGS



## PRODUCT CODES

A46U10007

3S-CHL chlorophyll sensor made of titanium

3S-PC1000

Probe controller with color touch screen

A46U10035

Stainless steel continuous flow D.36 sensor holder